

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

1. (Currently amended) A method for determining a quality of an optical link, comprising:  
identifying a known signal;  
transmitting and receiving the signal over an optical link;  
comparing the received signal to the known signal using optical correlation; and  
determining a quality of signal of the optical link based on the comparison without regard  
to a history of transmission errors.
2. (Currently amended) The method of claim 1, wherein comparing includes correlating the received signal  $r(t)$  with the known signal  $s(t)$ , where  $t$  represents time, using the function  $c(t) = \int_{-\infty}^{\infty} s(t)r(t - \tau)dt$ , where  $\tau$  represents a time delay.
3. (Currently amended) The method of claim 1, wherein comparing includes optical correlation implemented in a discrete system by sampling the received signal  $N$  times, according to the function  $c(t) = \sum_{k=0}^{N-1} s_k r(t - k\tau_k)$ , where  $\tau$  represents a time delay.
4. (New) The method of claim 1, wherein the determining includes determining an attenuation associated with the optical link.
5. (New) The method of claim 1, wherein the determining includes determining a dispersion associated with the optical link.

6. (New) The method of claim 1, wherein the determining includes determining a noise associated with the optical link.
7. (New) The method of claim 1, wherein the determining includes determining a jitter associated with the optical link.
8. (New) The method of claim 1, wherein the receiving includes sending the received signal to a delay line having a plurality of taps and the comparing includes comparing each of a plurality of tapped received signals to the known signal.
9. (New) The method of claim 1, wherein the optical correlation is completed in approximately four bit periods.
10. (New) The method of claim 1, wherein the optical correlation is completed in approximately eight bit periods.
11. (New) The method of claim 1, wherein the determining includes evaluation of a curvature of a correlation peak function.
12. (New) The method of claim 1, wherein the determining includes evaluation of a shape of a first correlation function.
13. (New) The method of claim 1, wherein the determining includes evaluation of a peak height and peak location in a correlation function over a plurality of samples.
14. (New) A method for determining a quality of an optical link, comprising:
  - identifying a known signal;
  - transmitting and receiving the signal over an optical link;
  - comparing the received signal to the known signal using correlation; and

determining a quality of the optical link based on the comparison without regard to a bit error rate associated with the optical link.

15. (New) The method of claim 14, wherein the comparing includes at least one of an optical correlation and an electronic signal correlation.

16. (New) The method of claim 14, wherein the determining includes at least one of determining an attenuation associated with the optical link and determining a dispersion associated with the optical link.

17. (New) The method of claim 14, wherein the determining includes determining a noise associated with the optical link.

18. (New) The method of claim 14, wherein the determining includes determining a jitter associated with the optical link.

19. (New) A method for determining a quality of an optical link, comprising:  
identifying a known signal;  
transmitting and receiving the signal over an optical link;  
comparing the received signal to the known signal using optical correlation; and  
determining a quality of the optical link based on the comparison without using eye diagram techniques.

20. (New) The method of claim 19, wherein the optical correlation is completed in approximately four bit periods.